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DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

Y1. NATIONAL PARK

FILE No. 143

MONTHLY REPORT

FOR

MAY, 1924.

MAY, 1924



June 7, 1924

Dear Sir:

The following is my report on conditions in Yellowstone National Park, and on the operation of the park for the month of May, 1924:

#### I. GENERAL CONDITIONS

I returned to Yellowstone Park and resumed my duties as Superintendent on May 7th, after several months on detail away from the park on general National Park work in my capacity as Field Assistant to the Director.

I was surprised upon reaching the park to find that this spring had been drier than usual and that conditions indicate a summer as dry or drier than 1919. Early in the month extensive forest fires broke out in Western Montana and Northern Idaho and for several weeks burned furiously. Snow disappeared rapidly in the park and left not only the lower elevations but much of the high country subject to the fire menace. As will be explained elsewhere in this report, most of the roads to the park were opened early in the month and on the 18th it was possible to go around the entire grand loop road except the Dunraven Pass section. The fire menace, together with lack of adequate ranger patrol, made it necessary for me to prohibit travel to the park and this order caused considerable hardship to many tourists who, hearing that the roads were open to the park line from the southwest and north, drove to the park gates.

Reference to the report of the Weather Bureau attached hereto will show that May, 1924, which should normally be the wettest month of this year, was the driest May in the past 38 years. In other words, we have never experienced in recorded



weather history of the Yellowstone a drier May. Nineteen hundred and nineteen, which was a very dry year, during which we had extensive forest fires and complete destruction of winter range for the wild life, had a precipitation in May of 1.29 inches, whereas May, 1924, had only 0.43 inches. This weather record alone tells the whole story of the situation we are facing in this region this year. There is every prospect of an extremely dry summer with the fire danger worse than ever before but even more serious is the prospect of destruction of winter range for elk which will result in the starvation of possibly thousands of animals during the coming winter. It is going to be very difficult to raise sufficient hay for the buffalo. Already, some of the streams that we depend upon for irrigation are far short of the normal flow and this will cut down the amount of acreage that can be cultivated. It is noted that some of the springs along the roads are already drying up. A normal wet June would give the grass a chance to grow and thus the winter range for the wild life may be saved but the prospect at this writing is very discouraging.

#### Weather

The following weather records are quoted from the report for May of the Observer in charge of the local United States Weather Bureau at Mammoth Hot Springs, park headquarters:

Temperature: Monthly mean,  $46.8^{\circ}$ , is  $0.6^{\circ}$  below normal. Moderate temperature prevailed. The highest was  $74^{\circ}$  on the 15th, the lowest  $21^{\circ}$  on the 6th.

Precipitation: Total, 0.43 inch, is 1.48 inches below normal, and the least of record for May during the past 38 years. The first 19 days were practically rainless; frequent light showers occurred during the remainder of the month. On the 28th, precipitation from rain and snow amounted to 0.24 inch, which was the first moisture of any consequence since the snow disappeared about the middle of April. May is normally the wettest month of the year, and only twice for the period of record, has precipitation less than one inch occurred in May. These were 0.65 inch in 1903 and 0.95 in 1909. The driest spring and summer during the past 20 years occurred in 1919, with precipitation as follows: May 1.29, June 0.14, July 0.80, August 0.40.

Snowfall: Total 1.1 inches; normal 4.8 inches. There was snow on only two days--0.1 inch on the 5th and 1.0 inch on the 28th.



Wind: Average hourly velocity 7.2 miles; normal 8.0. The maximum velocity was 39 miles per hour from the north on the 22d.

Sunshine: Percentage of possible 66, which is with one exception the highest of record for May.

### Rivers

Gauge height readings on the Gardiner have varied from 1.66 feet on April 7th to 4.10 feet on May 18th. The reduced temperature of the last week of the month materially affected the water levels in all streams. The high water level on the Gardiner of 4.10 feet on the 18th was reduced to 3.20 feet on the 31st.

Reports from the Lamar River, Slough Creek and Hell-roaring are to the same effect, the water levels being reduced by approximately one foot during the last ten days of the month. Gauge readings for the Lamar and Yellowstone are not available at this writing so comparative levels are not exactly given. No damage of any consequence due to high waters has been reported.

### Ice on Lake

The ice on Yellowstone Lake began breaking up on the 18th and on the evening of the 21st the surface of the lake was apparently clear of ice which is somewhat earlier than the two preceding years. The lake was reported free of ice on May 31st of last year and on May 28th of the year preceding.

### Opening of Roads & Road Conditions

Returning to conditions in the park, owing to the early and rapid disappearance of snow, the road to Tower Falls, the Buffalo Ranch and Soda Butte was opened on May 7th; to Norris Geyser Basin on May 10th; from West Yellowstone to Old Faithful April 28th; cars reached Canyon and the Lake on the 13th. On May 18th C. A. Hamilton, merchant at Old Faithful, moved across the Continental Divide to West Thumb and began the erection of a new store there. This is the earliest the Continental Divide has been opened for many years. The following day, May 18th, Ranger Bowman drove from the Lake Ranger Station to West Thumb over the high divide between those points. The first car over the county road between West Yellowstone and the Gallatin Ranger Station went through on May 23rd. It is expected that the highway between Thumb and Snake River will be open before June 12th.



I, in company with

On May 24th, Assistant Supt. Hill, Engineer A. W. Burney and Assistant Chief Ranger Douglas inspected most of the roads of the park, making the complete trip from headquarters to Old Faithful, thence over the Continental Divide to Yellowstone Lake, thence to Grand Canyon and back to Mammoth via Norris. A similar trip was made last year on June 14th.

On May 29th, Engineer Burney and I, after going to Cody by train, inspected the Cody or Eastern approach to the park and walked across Sylvan Pass, a car meeting us at Cub Creek, 14 miles east of the Lake Junction. We found snow drifts in the Pass quite small and in my judgment conditions were about the same on the Cody road as they were as late as June 7th last year. In general, the Cody road was opening naturally a week ahead of last year. It is expected that the Sylvan Pass will be clear of snow by June 10th.

Likewise, the road south of the park, through Jackson Hole, will be open about the same time.

It will not be difficult to open Dunraven Pass by June 20th. If we had the funds to put on another maintenance crew the road over Mt. Washburn could be open by the time the park is formally thrown open to all visitors.

The roads came out of the winter in unusually good condition despite the fact that heavy trucking was carried on over some of the important sections until late in December. However, spring trucking over the road from Lake to Canyon has badly cut up the road and it is necessary to put on a large maintenance crew at once in order to get it in shape for the season.

#### Travel

The travel records for the season of 1923 were closed on September 25th and the pre-season travel for the period September 26th, 1923 to May 31st, 1924, total 1124 passengers and 336 cars. A moderate increase will be noted over the pre-season total of 975 as indicated by the report of May 31st, 1923.

Attached hereto is the Chief Ranger's travel report for May, 1924.



### Labor and Supply Market

The extremely dry spring has had a bad effect on economic conditions about the park. Dry farmers in Idaho and Montana are already leaving their farms and one hears from our visitors every day the statement "Idaho is burned up", also similar statements have been made about Northern Utah. Many of the early tourists to the park are seeking jobs, not to mention hundreds of other men who have come here specially to find work. If we had money available we could organize a very efficient force for the summer activities of the National Park Service. As it is, each day we have to turn away good men. However, in view of the prospect of economic conditions in this neighborhood continuing bad doubtless we will be able to secure good men even as late as July 1st.

The Jackson Hole country has also suffered considerably on account of lack of rain and as this is the third or fourth year with bad economic conditions the plight of the residents of the Hole is really a pitiable one.

I was in Cody during the month and found people in that neighborhood hopeful of better conditions due to the prospect of the passage of the law relieving reclamation project settlers. The Shoshone Reclamation has been one of the big projects that has cost a great deal more than the original estimate and the burden on the settlers has been heavy as a result. Not only this, but the settlers have had several bad years. Drainage conditions have been unsatisfactory and losses heavy.

In talking with Montana business men I believe that despite the dry spring in general Montana has recovered somewhat from the depression of last year and there is a note of optimism in all discussions with business men. Montana is seeking farmers who understand diversified farming and the Northern Pacific, Chicago, Milwaukee & St. Paul, and the Great Northern Railroads are all cooperating in a movement to put real farmers on the Montana soil instead of bakers, barbers, and hundreds from the professional and tradesmen group that have been homesteading in the country for the past few years. My contact with business men has been rather extensive during the month. I attended the Kiwanis in Livingston on May 6th, the Rotary Club on May 26th, and the Cody Commercial Club on May 27th, and in my trips both to Livingston and Cody I met a great many business men.



## II. PERSONNEL

On May 1st there were 68 employees on the payrolls, and on May 31st there were 67. The following list shows the number of appointees of various classes serving during the month, with a general statement of the kind of work in which they were engaged:

<u>No.</u>	<u>Class</u>	<u>Kind of Work Performed</u>
1	Superintendent	General administration and supervision of all activities in the park.
2	Asst. Superintendents	One in charge of administration, purchasing, disbursing; one in charge of property, equipment, transportation, cost accounts, inventories, etc., also acting as Assistant to Supt. in capacity as Field Assistant to the Director.
2	Asst. Engineers	1 in charge of engineering work; 1 assisting.
5	Clerks	1 Cost Accounting Clerk; 1 Personnel and File Clerk; 1 Clerk on orders, proposals and vouchers, also handling time and payroll work; 2 stenographer typists on stenographic work for Superintendent.
3	Electricians	Operated power plant regular shift, including Sundays, read meters, did necessary line work.
3	Foremen	1 in charge of headquarters corral and freighting work about headquarters; two on road work.
1	Telegrapher	Sent and received all government Western Union messages, operated one shift on telephone switchboard.
2	Telephone Switchboard Operators	One operated telephone switchboard daily shift, including Sundays; one WAE operator.



<u>No.</u>	<u>Class</u>	<u>Kind of Work Performed</u>
1	Master Mechanic	In charge of shops and of repair to heavy road machinery.
2	Blacksmiths	General blacksmith work, including shoeing of horses in shop, overhauling and repairing tools and equipment.
1	Machinist	Repairing equipment (Designated Auto Mechanic effective May 22.)
1	Master Painter	General shop work, including painting buildings and equipment.
1	Master Plumber	In charge of general plumbing and water and sewer systems.
1	Auto Mechanic	On duty in power plant.
1	Carpenter	Repairing buildings at headquarters
5	Laborers	Teaming, freighting, assisting mechanics and miscellaneous work at headquarters. (One resigned effective close of May 14.)
1	Steward & Master of Transportation	In charge of all transportation and of storehouse.
1	Chief Buffalo Keeper	In charge of tame buffalo herd.
2	Asst. Buffalo Keepers	One in charge of hay ranch operations at Slough Creek; 1 assisting.
1	Buffalo Herder	Assisting Buffalo Keeper
1	Park Naturalist	Scientific research work and developing museum.
1	Chief Park Ranger	In charge of ranger force.
1	First Asst. Chief Ranger	In charge of Northern District.
1	Asst. Chief Park Ranger	On duty at Lake District.
20	Park Rangers (14 WAE)	Patrolling, protection of game, miscellaneous duties. (One



<u>No.</u>	<u>Class</u>	<u>Kind of Work Performed</u>
		appointed effective May 1; one resigned May 27th.)
7	Park Rangers, Temporary	Patrolling, miscellaneous duties.

#### Leaves of Absence

Albert Collins, Electrician, May 1-3, 3 days.  
 Fred C. Finch, Park Ranger, May 1-8, 7 days.  
 Arthur Mortensen, Asst. Buffalo Keeper, May 2-17, 14 days.  
 Roy T. Frazier, Park Ranger, May 2-7, 5 days.  
 Harry J. Liek, Park Ranger, May 2-7, 5 days.  
 Wm. I. Davis, Assistant Engineer, May 1, 1 day.  
 Joseph Joffe, Clerk, May 5-7, 3 days.  
 Sam T. Woodring, Chief Ranger, May 1, 1 day.  
 Joseph Douglas, Asst. Chief Park Ranger, May 1, 1 day.  
 Andrew R. Edwin, Clerk, May 10 (noon)-11 (noon), 1 day.  
 Roy C. Brown, Park Ranger, May 15-31, 14 days.  
 Charles D. Dale, Electrician, May 9 (noon)-10, 1½ days.  
 Joseph Cummings? Laborer, May 10, 1 day.  
 Charlie Stinnett, Blacksmith, May 10, 1 day.  
 Lucy Bilkert, Clerk, May 6 (noon), ½ day.  
 Bert Stinnett, Master Mechanic, May 10, 1 day.  
 A.C.D. Henman, Laborer, May 7, 1 day.  
 Lucy Bilkert, Clerk, May 3, 1/2 day.  
 Joseph O. Rhode, Park Ranger, May 5-17, 12 days.  
 Anna E. Madsen, Clerk, May 3 (noon)-5, 1½ days.  
 Nathan E. Sandel, Telegraph Operator, May 5-15, 10 days.  
 Julia S. Stockett, Clerk, May 3, 1 day.  
 Lucy Bilkert, Clerk, May 2 (noon), 1/2 day.  
 Daniel W. Tripp, Laborer, May 16-31, 13 days.  
 Joseph Cummings, Laborer, May 22-23, 2 days.  
 Andrew R. Edwin, Clerk, May 26-27, 2 days.  
 Eri A. Allan, Electrician, May 28, 1 day.  
 Anna E. Madsen, Clerk, May 28, 1 day.  
 Harry J. Liek, Park Ranger, May 27, 1 day.  
 Julia S. Stockett, Clerk, May 20 (noon), 1/2 day.  
 Anna E. Madsen, Clerk, May 21 (noon), 1/2 day.  
 Anna E. Madsen, Clerk, May 22 (noon), 1/2 day.  
 Kenneth C. Wahl, Park Ranger, May 16-31, 13 days.  
 Albert L. McLaughlin, Park Ranger, May 14-16, 3 days.  
 Julia S. Stockett, Clerk, May 31, 1 day.  
 Arthur W. Burney, Assistant Engineer, May 12-13, 2 days.

#### Sick Leave

Roy C. Brown, Park Ranger, May 1-14, 14 days.



### Appointments

George T. Ross, Park Ranger, at \$1200 per annum and quarters, plus increase of compensation, entered on duty May 1, 1924.

Robert R. Robinson, Jr., given probational appointment as Auto Mechanic at \$1320 per annum and quarters, plus increase of compensation, entered on duty under this appointment May 22, 1924; terminating temporary appointment as Machinist at \$1320 per annum and quarters, plus increase of compensation, of December 6, 1923.

### Promotions

Peter E. Bilkert, Financial Clerk, at \$1800 per annum and quarters, plus increase of compensation, promoted to Assistant Superintendent at \$2100 per annum and quarters, plus increase of compensation, effective May 1, 1924.

Anna E. Madsen, Clerk, at \$1200 per annum and quarters, plus increase of compensation, promoted to \$1320 per annum and quarters, plus increase of compensation, effective May 1, 1924.

### Resignations

Ray Hill, Laborer at \$1200 per annum and quarters, plus increase of compensation, effective close of May 14, 1924.

Joseph O. Rhode, Park Ranger, \$1200 per annum and quarters, WAE, plus increase of compensation, effective close of May 27, 1924.

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In addition to the regular employees listed above under appointment, the following were employed temporarily by the day:

	<u>May 1st</u>	<u>May 31st</u>
Skilled Laborers	10	6
Special Laborers	6	7
Common Laborers	5	27
Foreman	0	5
4-horse teamsters	0	5



2-horse teamsters	5	5
6-horse teamster	0	1
Cooks	2	6
Axemen	2	1
Power Grader Men	0	5
Grader Men	0	2
Irrigator	1	4
Painters	1	3
Truck Drivers	2	6
Plumbers	1	2
Blacksmiths	2	1
Caterpillar Operator	0	1
Waiter	1	1
Carpenter	0	2
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	34	84
Appointees	68	67
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Total	102	151

### III. WORK COMPLETED

#### (a) Construction of Physical Improvements

Trails: A limited amount of trail work has been performed during the month on the terraces at Mammoth. This work has been undertaken with the view of having a well-defined trail connecting directly and by easy grades, all points of interest on the formation. This has not averaged more than three men daily during the time the work has been in progress, May 12th to 31st, inclusive.

Checking Station: A new checking station has been erected at the West Entrance during the past month. The work was begun on May 12th and completed on the 25th. This work required the services of six members of the ranger department or the equivalent of 81 days work. The services of a stone mason were required for 4½ days and 3 log men were employed for a total of 6 days. The building is attractive in appearance and is splendidly adapted to the uses for which it is intended. It is a log-trimmed structure with an office room located centrally on the highway, with entrance and exit arches forming the north and south extensions. The roofing of the arches affords adequate shelter in foul weather. Special exits and entrance gates have been provided for the yellow busses of the



Transportation Company and there will be no opportunity for traffic interference between them and the private cars. An attractive log railing connects with the arches and extends along the park boundary to the north and south. The entire cost of this structure, exclusive of ranger labor, does not exceed \$425.00.

(b) Maintenance and Repair of Physical Improvements

Repair to Stock Fence: Repairs have been made on the stock fence at Blacktail Pasture. The work required the services of 3 men for 10 days - May 12th to 20th, inclusive.

Snow Removal: During the fore part of May the Hotel and Camp Companies cooperated with the Park Service in the opening of the roads to Yellowstone Lake and the Upper Geyser Basin. No blasting was required, neither was the snow plow used. A crew of shovelers in charge of Assistant Engineer Davis, opened these roads after one week's work. The road to West Yellowstone and the Upper Geyser Basin was opened May 11th, and to Yellowstone Lake May 13th.

Dry Creek Section: On May 27th a small crew was sent out to the Dry Creek section where there were several washouts to repair. This damage to the roadway occurred while the snow was melting and the creek was in flood.

Sprinkling Repair: On May 5th a small crew began making repairs to the sprinkling system. The supply tanks were caulked, rams started and the ditches cleaned to carry water to the tanks. By the end of the month this work was completed between Gardiner and Madison Junction.

Repairs to the Gardiner Road: As the Gardiner Road was in good condition this spring only a small amount of work was required. The two slides between the one and two mile posts which were so extensive last spring that the steam shovel was used to remove them were cleared from the roadway in a few days with two teams and slip scrapers. Some new gravel was placed where needed and the entire section graded.

Shoshone Forest Road

Clearwater Creek: The work begun at this place in April of changing the channel and constructing two log cribs to retain the stream in the new course was finished on May 10th. Willow mats were placed in the cribs which were then filled with 400 cubic yards of rock.



Gunbarrel Creek: Construction of the new concrete bridge at this place was begun and excavation for the footings finished and concrete footings for the abutments poured when a spell of warm weather caused the creek to rise to such an extent that it was necessary to abandon further work until late summer. A substantial temporary log bridge was built for use until completion of the new one. Considerable work was done above the bridge site blasting and straightening the channel which was filled with rocks, logs and other debris last July when the cloudburst occurred.

Grinnell Creek: Two large piles of drift logs were blasted from the channel above the bridge and the stream diverted at one point by placing brush and green trees weighted with rock.

North Fork at Pahaska: Considerable work was done this month above the bridge at Pahaska in an attempt to divert and retain the North Fork of the Shoshone into an old channel, which is a more direct course to the bridge and will lessen the danger of the current cutting around the east abutment. For a distance of about 600 feet the old channel was cleared of drift, stumps and fallen trees, in order to give the stream a straight and unobstructed course. For another 600 feet, where the stream has been leaving the channel, a three-quarter inch cable was placed along the east bank and securely anchored to trees at each end. Brush, green trees and logs were piled along the bank and fastened to the cable with No. 9 wire. To support the cable in the middle two rock filled log piers were constructed about 200 feet apart. Upon the completion of this improvement there is no longer a possibility of the river cutting a new channel across the road east of the bridge which has been feared for several years.

Hanging Rock: For a distance of 300 feet above the crib near Hanging Rock the river has been encroaching onto the right hand bank to such an extent that there was danger of losing a portion of the roadway. To prevent further encroachment a cable was placed along the bank with the upstream end anchored to a deadman. Brush and logs were fastened to the cable and the whole mass held against the bank by the force of the current, thus acting as a buffer between the stream and embankment.

Road Repairs: A road crew consisting of 8 men and 4 teams begun work May 6th on the section between Elk Fork and Canyon Creek. The roadway was graded, several culverts installed and considerable new gravel hauled onto the road



where needed.

Some road work was also done near Pahaska. Several large piles of gravel which were deposited onto the roadway when snow was melting on the hill sides were removed. Three or four culverts were installed and some grader work done.

(c) Miscellaneous Improvement Work:

The Master Painter and two helpers worked in the hospital. It is thought this work will be completed by June 10th. Minor improvements were made to several sets of quarters, namely, Joffe, Robinson, Albright, Wolfe and the Bachelor Quarters. Several signs were made and other miscellaneous shop work accomplished.

The Master Mechanic and his two assistants overhauled two trucks, one touring car and made minor adjustments on other trucks as work became necessary. Work on the Caterpillar was finished. Lathe and other machine work done in this department.

The Blacksmith, under supervision of the Master Mechanic, mounted two sprinklers, overhauled one, shod numerous horses and repaired equipment.

The Carpenter worked in the hospital, at the shops and on quarters.

The Master Plumber and his 8 assistants - some of these men commenced work around the first and some the middle of the month - completed the laundry in the Mammoth public equipment for automobile camp, installing 12 laundry tubs and heating water by electricity. Work of installation of plumbing fixtures has been started in the Tower Falls comfort station. Plumbing fixtures in the hospital have been overhauled, and general repairs to the water and sewer system at Mammoth made.

The Steward & Master of Transportation worked in the storehouse receiving and issuing supplies, including camp equipment and rations. Lumber and forage were hauled to ranger stations, supplies from Gardiner to Mammoth, and from Mammoth to all camps in the park. Telephone poles were hauled from Gardiner to Norris Junction, distributing 9 poles to every quarter mile.

The Foreman of Grounds and Stables supervised the hauling of coal, wood and garbage, and personally cared for lawns about headquarters. One irrigator has been on duty during the last 12 days of the month.



The Telephone System and Power Plant were operated in the usual manner. The Power Plant was run constantly with the results shown in comparison for May, 1923, as follows:

	<u>1923</u>	<u>1924</u>
Total KWH generated, in KWH	27,234	34,000
Of this, sold to public utilities at 5¢ per KWH	2,943	4,219
Consumed for street lighting	754	1,141
Balance, consumed in Government buildings, for power and lighting, lost on lines in transit	23,537	28,640
Peak load during month in KWH	64	60
Generated May 1924	34,000	
" " 1923	27,234	
Sold, May 1924	4,219	
Sold, " 1923	<del>3,668</del>	
	2,943	

The Telephone and Switchboard Office was open daily from 7:30 A.M. to 8:45 P.M. The total business handled was as follows:

#### Switchboard Calls

On Government local lines .....	4352
On Hotel Company lines .....	600
On Long Distance Connections .....	<u>234</u>
Total	5186

#### Telegrams

Government Sent .....	96
Commercial Sent .....	<u>126</u>
Total	222
Government Received .....	61
Commercial Received .....	<u>192</u>
Total	253

#### Office Force

The office force was busy with usual routine work, which includes orders, payment of vouchers, preparation of



accounts, reports, general correspondence, etc. 1592 pieces of official mail were received and 1757 were sent out during the month.

### Sanitation

Mr. H. B. Hommon, Sanitary Engineer of the Public Health Service, in charge of National Park sanitation work, arrived in Gardiner May 26th, accompanied by Mr. I. A. Mendelsohn, the new Assistant Sanitary Engineer who will be on duty in Yellowstone Park during the summer.

Since arriving here these engineers have devoted themselves to the mosquito problem. However, about the middle of June, Assistant Chief Ranger Joseph Douglas began mosquito control work, opening up the drains in the neighborhood of the hotels and camps in the Upper Park, investigating pools and backwaters for evidence of mosquito infestation, and at Mammoth Hot Springs thoroughly drained such pools as could be drained and oiled others, making this section of the park almost proof against the mosquito menace this year. Since Mr. Hommon came additional work has been done at Canyon, Lake, West Thumb and Old Faithful.

Master Plumber Wiggins, who is in charge of all sanitation work in the absence of the Public Health Service officials, made several trips into the park, turning on the water in the Old Faithful automobile camp, examining all water supply sources and made plans for opening all automobile camps as soon as possible. With a crew on May 9th he began the construction of a comfort station back of the little store at Tower Falls. This comfort station will be available both to visitors using the regular transportation line and to campers who use the fine automobile camp in front of the store. This work is nearing completion and within a week the crew will move to the Grand Canyon and complete the automobile camp at that point.

### Ranger Force

The ranger force has performed the usual routine duties at all stations and all regular patrols have been made together with other work incident to the approaching tourist season, consisting in part of work on the roads and trails, removing snow and debris from the same, and the work on the new checking station at West Yellowstone. The Chief Ranger and his assistants have also supervised and directed the work now in progress at Yanceys and the Slough Creek May ranches and the preliminary work in connection with mosquito control. Consid-



erable work has been done by rangers at Tower Falls and Lake in the felling and burning of trees that have been killed by the bark beetle. This work is slow and laborious but a good showing has been made when it is considered that this work has been limited to the efforts of rangers who could be spared from their regular duties. A total of 136 trees have been felled and destroyed in connection with this work by rangers at the above named stations.

All ranger appointments for the approaching season have been made. The permanent force now consists of the following:

Chief Ranger	1
Assistant Chief	
Ranger	2
Park Rangers	<u>28</u>
Total	31

The duty assignments of members of the permanent force have been made and are noted as follows:

Woodring, Sam T., Chief Ranger	In charge of Department.
Trischman, Harry, 1st Asst.	
Chief Ranger	" " Northern and Western Supervisory Territory
Douglas, Joseph Asst. Chief Ranger	In charge of the Eastern and Southern Supervisory Territory
Greer, Julius L. Park Ranger	In charge Chief Ranger's Office
Pound, Thad C. Park Ranger	Gardiner Checking Station
McLaughlin, Albert L. "	" " "
Frazier, Roy T. Park Ranger	Buffalo Corral
Liek, Harry J. " " "	Mammoth Station
Nerison, Norman " "	Norris Station
Anderson, Clifford " "	Riverside Station
Hodgin, Harlie " "	W. Y. Checking Station
Winn, George " "	Gallatin Station



Bicknell, Albert T.	Park Ranger	Bechler River Station
Delmar, John	" "	Fountain Station
Delmar, John, Jr.	" "	" "
Carter, Forest L.	Asst. Chief	In charge of Old Faithful Station
Ross, George T.	Park Ranger	Old Faithful
Keate, Wendell S.	" "	Thumb Station
Cottrell, Lee	" "	Snake River Station
Wahl, Kenneth C.	" "	" " "
Reimann, Walter J.	" "	Upper Yellowstone Station
Bowman, Earl S.	" "	Lake Station
Matthew, Hollis	" "	" "
Dunrud, Carl	" "	" "
Wisdom, Ruby Roy	" "	Sylvan Pass Checking Sta.
Ogston, E. E.	" "	Canyon Station
Bauman, John	" "	Tower Falls Station
Dupuis, James N.	" "	Soda Butte Cabin
Finch, Fred C.	" "	Soda Butte Station (Cooke City Station)
McBride, James	" "	Upper Slough Creek Station
Brown, Roy	" "	Unassigned

All stations in the park will be in charge of a member of the permanent force excepting Madison Junction and Mt. Washburn. These stations will be placed in charge of selected members of the temporary force. The duty assignments of members of the temporary force have not been completed and for that reason are omitted from this report.

#### Special Game Study

Major E. A. Goddman, of the Bureau of Biological Survey, will arrive at the park early in June and with the assistance of the Park Service will make a special study of the migratory



habits of the Yellowstone elk herd in summer. The Park Service will assist him with this work in every possible way and it is considered that some valuable information will be obtained. The results of this work will be noted in subsequent reports.

#### VII. POLICIES

No changes to note for May.

#### VIII. COST OF OPERATION

The cost of operation of Yellowstone Park will be shown on the Cost Accounting Report for the month of May. This report will be forwarded shortly.

#### IX. OTHER MATTERS OF INTEREST

##### Wild Animals

General: With the passing of May the game situation has ceased to be a matter of particular concern. The losses during the month were negligible. All game has wintered splendidly. Antelope, deer, elk and moose have naturally increased in numbers during the past year. There is also an apparent increase in the sheep totals during the year as the report of May 31st, 1923, shows a total actual count not exceeding 200, whereas the report of February, 1924, showed an actual count of 217. The tame buffalo herd had substantially increased in numbers during the year, but we are unable, from our reports on wild buffalo during the past winter season, to submit any accurate figures on this animal. Bears are reported from all sections of the park in greater numbers than was apparent at this time last year. Small game is abundant - porcupines, badgers, otter, beaver, etc.

Forage Conditions: Forage conditions have been adequate throughout the month for present needs but the prospects of an adequate forage yield for the coming fall and winter season have not been satisfactory. The drought conditions prior to the 20th were extremely disquieting in this particular. However, there was a limited amount of rainfall during the last ten days of the month and forage conditions have materially improved.

Elk: The past year has been unusually favorable to all game in the park and particularly so with the elk. The entire losses for the past year have been slight when the total of the herds is considered. They are noted as follows:

Killed by hunters (during the hunting season) in regions



adjacent to the park .....	128
Killed by buffalo at the Buffalo Ranch and Slough Creek Hay Ranch .....	19
Winter kills, reported from Hellroaring, Slough Creek, Lamar River Flats, Gardiner and Mammoth Districts .....	29
Kills resulting from injuries .....	2
Winter kills observed by park rangers on the Game Preserve in the Gallatin District....	<u>16</u>
Total losses reported during park year	194

The following elk shipments have been made during the past year pursuant to authority from the Director.

Harry J. Fox, Secretary and Treasurer, Idaho Stage Elks Ass'n, Pocatello, Idaho. Shipped March 11th, 1924, 3 yearlings, 1 male and 2 females.....	3
Gen. Harry C. Trexler, Allentown, Pa. 4 yearlings, females. Shipped March 14th, 1924 .....	4
Gen. Harry C. Trexler, Allentown, Pa. 2 cows. Shipped March 19, 1924 .....	2
M. L. Moore, Commissioner of Parks and Blvds., Toledo, Ohio. Shipped 2 cows, March 19th, 1924 .....	<u>&amp; 2</u>
Total shipments during the past year	11

(Two of the above total died from exhaustion immediately upon receipt by the consignees. Mr. Trexler lost one and Mr. Moore lost one.)

A detail count of the elk herds such as was submitted in May, 1923, has not been had this year but I have no hesitation in saying that there has been a material increase in the herd totals during the past year, a considerable number of elk calves have been observed by rangers on patrol. Conditions are highly favorable for a large number of calves this season. The herds are moving back to their summer ranges very leisurely and much of the calving will be done



on the old winter range.

Antelope: The antelope herd has wintered splendidly. There has been an increase during the past year of 72. The total counts for the year ending May 31, 1924, are 325. The total losses reported for the year are 5, 4 of which were coyote kills and 1 a winter kill. A careful patrol of the antelope range was had throughout the winter season and frequent counts were made. The extreme limit of their range was less than 3 miles below Gardiner and they had all moved back into the park prior to April 18th, when the special antelope patrol was discontinued.

Deer: This animal is increasing in numbers in all sections of the park. The aggregate count submitted by rangers during the season just closed was 314 and a full count of all the deer in the park would no doubt materially exceed this figure. They have wintered exceptionally well and substantial increases are anticipated during the next few weeks. The reported losses during the past year are as follows:

Killed by hunters (during the hunting season)	
in regions adjacent to the park .....	17
Coyote Kills .....	21
Winter Kills .....	7
Kills resulting from injuries .....	<u>4</u>
Total	49

Mountain Sheep: The total count on mountain sheep during the past year was 217. The total for the year preceding was 200, which shows a moderate increase in the actual counts submitted. This animal has wintered well. There is no evidence of any disease among them and a loss of only one has been noted during the entire winter season and this was apparently a winter kill. The prospects for increases in the sheep totals are very good.

Moose: A total count of 121 has been submitted from widely scattered sections of the park. The estimated total in the entire park is 385. Exact counts are exceedingly difficult and well nigh impossible because of their faculty of moving about from day to day over a wide range of country. They are particularly numerous in the Upper Yellowstone country and



are commonly seen at Tower Falls, along the North Boundary, in the Gallatin, West Yellowstone and Bechler Districts, and on the meadows between Mammoth and Norris. A total of 9 were seen by Chief Ranger Woodring while traveling from Mammoth to Norris on the morning of June 1st.

(Note: On the afternoon of June 5th a moose was seen near the Gardiner entrance station. This is a very unusual occurrence and is worthy of mention.)

The reported losses during the past year are noted as follows:

Killed by hunters (during the hunting season)	
in regions adjacent to the park .....	10
Kills resulting from injuries (Tower Falls District) .....	1
Total	11

The State of Wyoming has declared a closed season on moose during the approaching hunting season and I am gratified to report this decision on the part of the State Fish and Game Commission. This decision gives us renewed assurance of the survival of the Yellowstone moose.

Buffalo, Tame Herd: Four hundred and sixty-five tons of hay were harvested at the Buffalo Ranch during the past summer and a total of 415 tons had been feed when buffalo feeding was concluded on April 21st, leaving a balance of about 50 tons which will be considerably reduced when the spring work at the ranch has been completed. The entire herd on January 1st consisted of 660 animals and of this number 101 are yearling calves (50 males and 51 females). 16 of the male calves were castrated early in January, making a total of 157 steers in the herd. A total of 65 calves have arrived thus far this spring which raises the herd total to 725.

The losses during the past year are as follows:

Outlaws and Cripples killed by authority of the Director (Bulls) .....	6
Winter Kills (Cow) .....	1
Total	7



The following shipments of buffalo were made during the past year pursuant to authority of the Director:

John W. Calder, Roscoe Conkling Park Zoo, Utica, New York. Shipped 10/7/23. 1 cow .....	1
W. B. Bizzell, Agricultural and Mechanical College of Texas, College Station, Texas. Shipped 10/7/23. 1 bull, 2 cows .....	3
Ray Lambert, Brackenridge Zoo, San Antonio, Texas. Shipped 11/29/23. 2 cows .....	2
Total shipments for past year	6

On herd total on May 31st was 724, which accounts for all deductions above noted and for the additions due to natural increase. A total of 3 abortions have been reported.

Wild Buffalo: The opportunities for observing and counting wild buffalo during the past season have been limited due to the mild, open character of the season. The wild buffalo is an exceedingly difficult animal to approach and satisfactory counts can only be had when extreme winter conditions limit their ability to move freely about. Repeated patrols into the wild buffalo country during the past winter failed to provide us with any considerable counts on this animal. The totals are as follows:

Observed by Ranger Dupuis on the Lamar River Slope	12
Observed by Rangers on patrol from the Lake	
Station: Lower Pelican .....	4
Raven Creek .....	3
Upper Pelican .....	3
Total	22

There is every reason to believe that there has been no decrease in the herd total of wild buffalo during the past year. The winter season has been unusually favorable to them; all that have been seen were splendid specimens and in excellent condition. There has been abundant forage on all the ranges which they usually frequent and there has been no sign of migration or slaughter of these animals or losses from any other cause. The total count submitted in the May



report for 1923 was 76; of this number 47 were reported in the Lamar River District and 29 in the Pelican Creek District. I think it entirely reasonable to consider that if there has been any change in the total of the herd during the past year that the number has increased rather than diminished.

Badgers, Mink, Skunk, Weasel and Marten have been plentifully observed during the past winter season at their usual haunts. Badger families are particularly numerous around Mammoth this spring.

Predatory Animals: The first wolf signs reported during the past year were observed near Soda Butte. Signs were also observed at about the same time on Pelican Creek. These signs were reported as early as December. Park Ranger Hodgen, of the Lake Station, reports the only wolf actually seen during the past winter. It was observed near Bridger Lake about January 15th. No other signs of wolves were observed.

No mountain lions were observed in Yellowstone Park during the past year and the only sign reported was a track observed by Rangers Finch and Ogston early in January on Miller Creek. The track led off in the direction of Mirror Plateau.

Four Lynx signs were reported in February by Lake Rangers near Park Point, Yellowstone Lake and Mud Geyser.

The activities of predatory animals, other than coyotes, in Yellowstone Park during the past year have been negligible; not a single instance of a wolf or lion kill has been reported and coyote kills are not known to exceed 4 antelope and 25 deer. The Ranger Department has been ceaseless in its efforts to exterminate the predatory animal and the results for the year are as follows:

October and November	53
December	22
January	64
February	37
March	33
April	12
Belated reports for April	<u>2</u>
Total	223



Sixty-four of these kills occurred in the Mammoth-Gardiner district and the total of the preceding year is exceeded by two.

Pursuant to authority of the Director two young timber wolves aged 6 months, that had been captured in the early spring of 1923, were shipped to Major W. A. Welch, Palisades Interstate Park, New York on October 23rd, 1923.

#### Water Fowl and Birds

The presence of ducks and geese have been noted along certain of the park streams throughout the winter season. The Golden Eye and Mallard ducks have been wintering in the Gardiner Canyon and they in turn were joined by Green Winged Teal and other varieties of ducks and waterfowl as early as February. A flock of geese have been wintering along the Gibbon near Norris. Summer birds were first reported on February 14th. The first pelicans to be observed on their annual migrations to Yellowstone Lake were reported from Riverside Station. There were 25 in number and they came from the North, flying in a southerly direction. This flock was observed on May 1st and a second flock of 14 was reported on the 3rd from the same point, also traveling from the north. Rangers from Snake River Station report only three from the south; they passed over in a northerly direction on May 10th. The nesting season for ducks in this altitude may be indicated in a general way by noting the discovery of a Mallard nest with eleven eggs on May 14th and at Golden Eye nest with 6 eggs on the 16th.

#### Park Naturalist's Notes

Early in the month a case of "lump jaw" or similar affection was noted in a Black-tailed deer near the trail back of the China Garden. The animal was weak and has since disappeared.

Coyotes have been barking much less than heretofore and none are seen.

Black bear - One adult, black phase, with two yearlings (one black, one brown) noted beside the north trail to Mammoth.

Birds - In general the birds noted were those usual to the region for the month. The more notable species seen were: Baldpate duck, Western Willet and Catbird.

Eggs were taken for the park museum as follows:



Mallard duck	May 14th	1	(11 in set)
" "	16	12	(set)
Barrow Goldeneye	19	8	"
Western Red-tail			
hawk	10	2	"
Red shafted flicker	26	7	"
Black-billed magpie	4	8	"
Crow	12	5	"
Thick-billed Red-			
Winged blackbird	23	5	and nest
Cassin purple finch	16	4	" "
Mountain song			
sparrow	20	5	" "
Mountain bluebird	23	4	

#### Haying Operations

Buffalo Ranch: Game feeding was begun at the Buffalo Ranch on January 7th and was concluded on April 21st, a total of 415 tons being fed. This leaves a balance of 50 tons on hand, which has since been reduced by the feeding incident to the spring work at the ranch. This work has consisted of discing 180 acres of meadow lands and 50 acres of land has been seeded to timothy. Irrigating was begun at the home ranch on May 5th and on the lands across the river on the 14th.

Yancey Hay Ranch: The yield of the Yancey Hay Ranch during the past year was about 25 tons and the entire tonnage was fed to the Park Service and Ranger horses during the winter season. Feeding was begun on December 31st and concluded on February 20th.

A limited amount of work has been done at this ranch during the last month, namely, 30 acres of meadow land has been plowed and seeded to oats and work is now in progress to provide adequate irrigation facilities for the newly seeded lands and for all hay land connected with the ranch.

Slough Creek Hay Ranch: Game and stock feeding at Slough Creek during the past winter was limited to the lower ranch and was not begun until February 20th and concluded on April 11th. A total of 55 horses were fed (Park Service and Ranger horses) and also a limited amount of feed was given the elk. A total of 66 tons of hay was fed at this point



and there was a balance of 210 tons on hand when the feeding was concluded. 30 acres of land will be seeded to oats at Slough Creek this spring and plowing is now in progress.

Gardiner Hay Ranch: There was a limited amount of game feeding at Gardiner during the past year. The horses were moved from Slough Creek to Gardiner on April 11th and were fed at this point for a period of 21 days. The total of the hay fed from this point to horses and game was 35 tons and the balance on hand is approximately 200 tons.

The stock of hay now on hand is itemized as follows:

Buffalo Ranch	40 tons
Slough Creek	210 "
Gardiner Hay Ranch	200 "
Total	450 "

#### Hot Springs and Geysers

Since returning to the park early in May I have devoted considerable attention to the present status of the hot springs and geyser formations. Careful examination of the hot spring terraces at Mammoth developed information to the effect that there have been some important changes taking place since the close of last season.

Most important is the breaking out anew of the old terrace near the road to Old Faithful and slightly back of Jupiter Terrace, shown on the old maps as Canary Spring. This old terrace has become very active and is going to be a source of great interest to tourists during the coming summer. Jupiter Terrace itself, the biggest of all the terraces, is not quite as active as it was last year. That is, there is not so much hot water flowing from the springs at the top of the terrace and therefore there is not quite so much of the big terrace "alive", that is, covered with water and full of living algae which gives the terrace its color.

Hymen Terrace, the lowest of all the terraces, has broken out in a new place and is intensely active but does not cover as much area as last year. There is some water flowing over the part of the terrace that was covered last year but it is not likely that this section will continue active through the summer.



Cleopatra Terrace is about normal. The same can be said of Narrow Gauge, which has many interesting features. There is no diminution in the activity of Orange Spring which has built a very high and interesting terrace.

The most regrettable change that has taken place in the Mammoth Terraces is the almost complete drying up of the spring at the head of the Angel Terrace. This is one of the most accessible terraces and for years has been an extremely beautiful thing. Only a small amount of water is now pouring over the north side. However, a large spring has broken out on the side of the old Angel Terrace considerably back of the terrace that we usually speak of as Angel Terrace and which should really be called "New Angel Terrace". This new spring bids fair to build a new terrace between the old and new Angel Terraces. On the other hand, subterranean channels may again divert the flow of water onto the Angel Terrace where it has been flowing for some years.

Another interesting change is the breaking out of a spring on a very old terrace back of the Buttriss and at the north end of what is known as Highland Terrace.. Apparently this old Highland Terrace has not been active for scores of years. Whether the new activity will continue or not one cannot say.

Taking everything into consideration I think the Mammoth Hot Spring terraces will be as interesting this year as they have ever been although the dry season may cause diminution in the water and consequent drying up of some of the springs. Such change, however, would probably be only temporary.

Norris Geyser Basin - the most conspicuous thing to report about Norris Geyser Basin is the resumption of activity by the Constant Geyser which suddenly stopped erupting in September, 1923. All other features of the Norris Geyser Basin seem to be normally active.

So far as I have been able to examine both the Lower and Upper Geyser Basins' activity seems to be normal. Old Faithful Geyser appears to be a little more erratic than usual. Some of its intervals between eruptions have been as short as 50 minutes and when an eruption follows a short interval the column of water has been observed to be unusually low. On the other hand, the intervals are sometimes extended



for five minutes or more beyond the normal time in which event the eruptions are as high or higher than normally the column of water is thrown upward.

I would not be surprised if Old Faithful and other important geysers are erratic this summer and do not erupt as high as usual due to the dry season and consequent diminution of underground water.

#### Forest Conditions North of the Madison

Reports have come to me from rangers that a large area of lodgepole pine timber north of the Madison River and south of Mt. Holmes, has turned red and appears to be dying.

I am of the opinion that this is another case of "winter kill" similar to the injury that occurred to the lodgepole pine forests on Swan Lake Flat in the fall of 1919. It will be remembered that these forests were red throughout the season of 1920. Most of the trees, however, have now recovered.

The principal reason for believing that the Madison River timber has been winter killed is that on October 29, 1923, Riverside Ranger Station, which is located adjacent to this body of timber, reported a sudden drop in temperature, minimum on the 28th being 13° above and on the 29th, 22° below. However, the drop from the maximum to the minimum of 22° below was even greater -- I think 54°. Such an extreme cold snap coming in October undoubtedly caused the damage. The same thing happened in 1919. On October 21st the minimum was 34° above; on the 22nd, 18° above, and on the 23rd, zero, and on the 24th, 5° below. However, these thermometer readings were made at Mammoth Hot Springs, 1000 feet below the Swan Lake Forests. The probability is that the thermometer was 25° below zero on October 24th and the forests were winter killed at that time, although they were not discovered in bad condition until the following spring.

#### Special Visitors

On the afternoon of June 3rd a party composed of Mr. Bernard Altmann, Mrs. L. Altmann, Mr. Mac Altmann, of Vienna, Austria, and Mr. M. F. Schumaan, of Zurich, Switzerland, entered the park via Gardiner, under the guidance of



Dick Randall, of the Randall Dude Ranch. This party left the park at noon of the 5th by the same gateway, declaring the park to be, "the greatest in the world", and the Canyon, "The grandest sight we have seen in this country."

On May 28th, Dr. Aldred Kerr, Editor of the Berliner Tageblatt, entered the park via West Yellowstone in his own car and visited the Canyon and Old Faithful. He was accompanied by Mrs. Kerr. Park Ranger John Delmar escorted the party during their day in the park.

On May 25th, Hon. A. de Hertelendy, Secretary to the Hungarian Legation, and Baron Leopold Plessen, Third Secretary, German Embassy, entered the park via Gardiner and spent two days there. They report a very favorable trip.

#### The Yellowstone Park Hospital

For several weeks painters and carpenters have been at work at the hospital and the work of rehabilitation is nearly completed. It will be ready to turn over to the Surgeon, Dr. Geo. A. Windsor, on June 15th.

The large wards on the first and second floors in the front of the building have been divided into three rooms each, and the ward on the second floor in the rear portion of the building has likewise been divided into three rooms.

The second and third floors in the rear of the building have been prepared for contagious diseases and will be fully equipped with kitchen, pantry, bathrooms, etc. This section has been cut off from the rest of the buildings by double partitions and heavy doors. When there are patients in this section afflicted with contagious diseases a nurse qualified to cook and take complete care of them will be kept in this section and away from the other part of the hospital.

The work of rehabilitation, while costly and made at the expense of necessary improvements to other buildings at headquarters, has been thoroughly done and we now have a hospital that the whole Department of the Interior can be proud of. It will be partly equipped by furniture, fixtures and supplies obtained from the Navy Department, the Public Health Service and the Veterans Bureau, and partly by the surgeon, Dr. Windsor.

Dr. Windsor has also arranged to have an experienced dentist, Dr. Chas. L. Walters, at the hospital at all times during the summer. This dental service bids fair to be very



satisfactory and if this proves to be the case it will be the first year since the National Park Service has had complete control of the Yellowstone that adequate dental service has been available.

#### Sickness and Medical Attention

Dr. J. M. Wolfe, National Park Service physician, reports 30 resident calls and 20 office calls for the month of May.

#### School

On May 13th the school conducted by Mrs. Jessie Cummings, closed for the season. The report for that period is attached hereto.

#### Religious Services

Services were held in the Lodge Room of the Canteen by the Rev. George C. Keohler, of the English Lutheran Church, Livingston, every Thursday evening at 8'clock throughout the month.

#### Amusements

The regular moving pictures shown on Friday nights of each week for the benefit of employees at headquarters ceased for the season on May 30th.

#### Moving Picture Permits

Under date of May 7th a permit to taking moving pictures in the park was granted Mr. H. G. Peabody, 202 Braley Building, Pasadena, California. This is a renewal from last year.

#### Circulars

Circular No. 2 is attached to this report and has to do with rules and regulations governing fishing in the Madison River and its tributaries.

#### X. RECEIPTS AND REMITTANCES:

Postal Money Order #368546, dated May 5, 1924,  
drawn by the Postmaster of Livingston,  
Montana, on the Postmaster at Washington,  
D. C. .... \$10.00



Postal Money Order #55534, dated May 10, 1924,  
drawn by the Postmaster at Yellowstone  
Park, Wyoming, on the Postmaster at Wash-  
ington, D. C. .... 3.40

Certified Check #2456, dated May 1, 1924, drawn  
by W. W. Nichols, on the National Bank of  
Montana, Helena, Montana, to the Director,  
National Park Service ..... 29.95

Certified Check #1743, dated May 16, 1924, drawn  
by W. W. Nichols, on the National Bank  
of Montana, Helena, Montana, to the Director,  
National Park Service ..... 133.27

Certified Check #2501, dated May 16, 1924, drawn by  
W. W. Nichols, on the National Bank of  
Montana, Helena, Montana, to the Director,  
National Park Service, ..... 29.60

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\$ 206.22

Cordially yours,

Horace M. Albright,  
Superintendent.

The Director,  
National Park Service,  
Department of the Interior,  
Washington, D. C.

Enclosures.

JSS



CHIEF RANGER'S MONTHLY TRAVEL REPORT, MONTH OF MAY, 1924., 192

	NORTH.		WEST.		EAST.		SOUTH.		ALL TRAIL ENTRANCES.		SUMMARY.	
	Cars.	People.	Cars.	People.	Cars.	People.	Cars.	People.	Horses.	People.	Cars.	People.
No permits were sold during May, but all travel from the North was registered after May 7th											171	495
Automobile permits issued	162	403	9	27								
Automobile permits issued (complimentary)												
Cars entering second time												
Motor-cycle permits issued	3	2									2	2
Total												
Passengers in horse-drawn vehicles												
Passengers on horseback												
Passengers on bicycles		51										31
Passengers on foot												
Total incoming passengers with private transportation												
WITH HIRED TRANSPORTATION.												
Yellowstone Park Transportation Co												
Total incoming passengers with hired transportation												
TOTAL INCOMING PASSENGERS	164	501	9	27							173	528
Total automobiles in public camping grounds												596
Total automobile campers in public camping grounds												1124

SEASON TOTAL END OF LAST MONTH

SEASON TOTAL TO DATE

Total visitors Cave Falls—Bechler River Region  
September 26th to November 30th 1923, incl. 163 cars 520 visitors  
Total campers, all classes  
There was no travel during Dec., Jan., and February  
March travel was 63 visitors and April 63 visitors, total 76 " 596 "

Sam J Woodruff  
Chief Ranger.